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# Welcome to 2002



But before I get into that, I'd like to note that we still found Canada's north stunning. Again this year, the exhibit area was divided into zones, or "pavilions," that concentrated exhibitions with similar technologies into common areas: Bluetooth, USB, Wi-Fi, Palm, and others.

We anticipated that security and videoconferencing vendors would be the big exhibitors this year, and so may have been half right. This year's security pavilion was called *SecureCity*, and according to two exhibitors I spoke with, there was an increased interest in security as people terra nova sought more of them of all types. But there was not any big push for videoconferencing. That happened a few years ago, so maybe even the vendors consider it old news. Given the deep dip in business travel, though, we think videoconferencing, like security, will be an option many businesses will revisit in 2002.

One exhibitor I was surprised to see was NTT DoCoMo, the Japanese trio that rolled out the world's first 3G cellular service in Japan last October. The mobile service is called FOMA (Frontier of mobile multimedia access), and includes a number of multimedia services that a 300Kbps download speed (100Kbps upload) permits. These include a lot of the services we already see available on cellular phones in this country (for example, weather and traffic reports, online banking, and news).

only served more quickly and on any cellular access.

NTT had a number of 3G phones on display, many looking a lot like the Sonya 9000 other phones adorning Times Walkways in various parts of the country. One model even incorporated a tiny digital camera that could be used to record both still images and video clips. I asked one of the representatives why NTT was at the show, given the incompatibilities of their service with North American cellular systems, and the stand simply "to show what is possible."

There were other technologies we found interesting, and you can read about those in our special show report section.

As an event, it was different than any other Comdex I've attended. Part, it was much smaller than in previous years. Two years ago, organizers reported that attendance exceeded 200,000, with more than 2,000 exhibitors taking part. While I haven't seen official figures for this year, one news report suggested attendance had fallen to somewhere around 100,000. Exhibitors came packed both the Las Vegas Convention Center and two floors of the Sands Convention Center, but the Fall 2001 show fit all of them into the DRC—with room to spare. I walked to the INVC one morning, down South Avenue and Paradise Road, and encountered just one person who was also walking. Last year, that noise was teasing with people.

In the weeks leading up to the event, we were informed by KeyMedia, the show organizer, that security would be tight. All attention would have to show photo ID and only media would be allowed to bring bags of computers into the exhibit halls. There were metal detectors set up at the entrance to the convention center that everyone had to pass through, and the area was being patrolled by security guards and bomb-snuffing dogs. But no one was required to show photo ID.

Had there been as many people as in previous years, the

security measures would have created a severe bottleneck, but with the diminished crowd, the only lineups (and short ones at that) were first things in the morning.

The Sept. 11 terrorist attacks in New York certainly had a part to play in the reduced attendance. I read a news report that said regulations for the show fell off by about 30 percent in the weeks following the attacks. The tailing of the PC industry in 2001 also had an effect, with companies scaling back marketing and travel budgets as a matter of survival.

But Comdex events were getting smaller even before Sept. 11, with the 2000 event in Las Vegas and the Vancouver and Toronto shows in 2001 feeling noticeably smaller than in previous years. For many years, Comdex was the main event for anyone who wanted to sell or buy the latest computer technologies. Today you can get so much information all the Internet, Microsoft, digital technology is a central part of many sectors now, including consumer electronics, telecommunications, photography, and film making. There's only so much that a single show can do to cover that expanding base, and meanwhile, other specialized shows have become better candidates to carry the digital message to their constituents.

In the past, we used Fall Comdex as a reality check on our own editorial planning for the coming year. It still serves that function to an extent, but we know, past its technology consumer do, that revealing the expanding digital economy needs more than a single discovery point. Our upcoming columns in earnest.

On behalf of everyone who works so hard to create and assemble *The Computer Paper*, I'd like to wish our readers and advertisers all the best in 2002.

David Tuckwell  
Editor

## Classic vendors take Yahoo online site

After using Yahoo as listed as an authoritative source on online business in Canada in your previous issue, I think your readers should be made aware of recent news developments at Yahoo Auctions. Specifically, for reasons known only to themselves, Yahoo has, in effect, expelled all Canadian vendors from participating in its online auction.

This month, veteran Canadian sellers on the site received a terse email stating that they would no longer be permitted to offer items for sale on the U.S. auction site. Vendors were told that they would still be allowed to sell on the Canada-only and international sections of the auction site, but as 85 percent of sales are made to the lucrative American market, this amounts to a de facto liquidation.

The expulsion of Canadians from Yahoo's auction site is a blatant display of protectionism that stings both its once loyal users

and the spirit of NAFTA in the heart. By reducing the amount of items up for sale, Yahoo has driven both sellers and buyers into the arms of eBay, and dented their custom base to boot. I'm not sure I can no longer up 20 to meet the numbers on that inevitable day. If Canadians are forbidden to sell on Yahoo Auctions, why should we bid there either? See you on eBay.

Frank Mackay

## Solution in disappearing ink

Had a reply to Oswald Markham's question (see letters, December issue) in regards to ink disappearance in just six minutes—and this applies to Epson, Hewlett-Packard and many other inks on the market—the printer is configured to do a self-cleaning at each power-up and after jobs. This usually involves getting a small amount of ink out of the print heads and that is where the colour ink vanishes—even if you are not printing in colour. In some cases, this "flushing" can be overridden from software in the control panel and your next job is your savings.

Shawn Jordan

I recently contacted Hewlett-Packard over the same issue. I set up my printer to print only

in grayscale to avoid using the colour cartridges when I want to print some information from a Web page.

After using a couple of black cartridges (grayscale turned to grayscale), it turns out that my HP printer (400) is designed to use the colour cartridges to attain "a better grayscale image" than would be possible by

using black only. I needed to replace the colour cartridges as one of the colours had run dry.

This was not explained in the documentation I received with the printer. Perhaps the Epson Stylus 400 also uses colour to print grayscale.

John Nelson



# WHAT'S NEW COMDEX FALL 2001

*Editors David Huxley and Product Review Editor Sean Connolly, make the pilgrimage to Comdex Fall 2001 in Las Vegas in mid-November to see what new products, services, and technologies may be coming round the corner in the new year. Following are some highlights from the show floor.*

## Aveto pushes digital ink

LAS VEGAS—Comdex has traditionally been a place to see what's on the digital horizon, and while the show was noticeably smaller than last year's event, innovation continued to be showcased.

One of the most ambitious projects we recommended is being led by Aveto, a subsidiary of Swedish company C Technologies. Aveto's goal is to build an infrastructure that will allow anything you write by hand to be captured digitally and sent to a computer, cell phone, or electronic organizer.

"We want to create a global de facto standard for pen and paper," says Kero Kristians, Aveto's Boston, Mass.-based vice-president of business development. But building such a standard requires coordination of three big building blocks: pen, paper, and data communications system.

The pen used for the demonstrations was Kristians' Chupen, a writing instrument with a free electron beam. It has a microphone in the writing tip, and also houses a microprocessor and a Bluetooth radio



module. As you write, the ink flows from the ball point as normal, but the camera also records the movement over the surface of the paper.

And that's the second part of the equation: Special paper printed with a barely visible pattern of dots is needed to provide re-usable reference points for the camera. The camera doesn't record the ink as it is being laid down on paper, but creates a matching digital trace from the reference dots on the paper.

Kristians calls it "smart paper" because the dots are not just X-Y coordinate markers, but may also be specific data that would be used by applications such as flow processors.

The third component is the Bluetooth communication system. In its simplest form, it could be a wireless transmission from the pen to a Bluetooth-enabled PC. One area Aveto hopes to quickly move into is paper-based organizers, where the Chupen system would eliminate the distinction between paper-based and electronic organizers.

What you write is a paper organizer would immediately become part of your computer-based personal information management. During Comdex Fall 2001, Aveto announced it had reached agreement with a number of organizer publishers, including At-A-Glance and Franklin Covey to work towards a common standard for digital paper.

*Continued on page 8*

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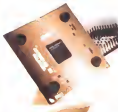




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*Maximum PC, August 2001  
Ultimate Upgrade Guide — CPUs and MOBs  
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# Stop thief!

## Essential steps for protecting your PC assets

By Jeff Evans

Early one morning in 1988, a stranger came to Concord, Ont. to visit Canada's first personal computer-based typesetting company, which my wife and I had established a year earlier. We didn't stay long, just long enough to have a casual look through the windows, jump in, and steal our state-of-the-art (for 1984) IBM portable and 286 typesetting PCs.

When we arrived to survey the scene the next morning, we had to sadly admit that we had made it easy for the thief. No burglar alarm, computers visible to the outside parking lot and road, no appropriate insurance coverage, and no external backups of the last 10 days' work. Yikes, we were insecure in three days, and it was just. With the benefit of hindsight, my advice is simpler: don't let this happen to you.

### Begin for the best, plan for the worst

The first step in protecting yourself and your computer systems is to think through a basic security plan.

**Risk:** How much could it cost you, if something goes wrong? How much financial or personal loss will you suffer if your computer is stolen, or if your home office or business is burned down?

If you're a hobbyist or student, the answer may be "not much." If your PC is critical to your livelihood, then neglecting security could bankrupt you.

**Budget:** How much time and money do you have to implement your security plan? Budget your security plan like you would any other part of your business or household management. Include ongoing training for yourself and employees, if



necessary, and recognize that there are additional ongoing costs, in time as well as in dollars, involved in any security plan.

**KISS** (keep it simple, silly): Always keep in mind that a security plan is only as good as the people using it. If someone turns a burglar alarm off and jumps a

cable open in a hot day, then goes to lunch, your system is void. If you attach a biometric fingerprint sensor to a PC, then lose the password, you have shut down the PC as effectively as if it had been stolen.

### Geometric drdres

## Unfriendly environments

The physical element is not the only risk to your computer and its data. Securing the environment to your computer avoids damage in a basic sense that is often overlooked in the home office: low-cost measures include:

- An anti-static plastic floor pad, especially useful in Canadian winters.
- An uninterruptible power supply (UPS)

keeps systems running in the event of a power outage, and protects against hardware damage or data loss due to power fluctuations.

- Environmental control: avoid exposing computers to excessive heat, humidity, water, or corrosion (from street salt tracked in to the office for example).

—Jeff Evans

Let's start with a single PC in the focus of concern, then work outward, to site security, networks, and other servers.

One way to protect a PC's data against theft or damage by unauthorized users is to deny an intruder the ability to physically use your computer. A wide range of biometric security devices are available to determine whether the person at the keyboard is authorized to use the PC, and if they aren't, to prevent them from accessing the computer.

According to the Mibopedia tech dictionary ([mibopedia.com](http://mibopedia.com)), "In computer security, biometrics refers to authentication techniques that rely on measurable physical characteristics that can be automatically checked. Examples include computer analysis of fingerprints or speech."

If the would-be user's fingerprint, voiceprint, retinal scan, or face scan does not match the list of authorized users, he or she is denied access by the biometric device.

Biometric technology can also be used for authentication for entry into or out from restricted or controlled areas, making electronic purchases, or transferring funds or goods.

Companies such as Secom and SecoGen already offer mice with built-in fingerprint scanners, and in the future these scanners will also be appearing on some notebook computers. The computer would analyze your fingerprint to grant you permission to use the computer. Authentication could also be tied to credit card transactions, or locking/unlocking electronic purchases.

Examples of biometric products currently available for PC users include:

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Page 1

### 340g Reef

*Continued from page 12*

- VeriFinger's 3d Sense Personal Authentication Peripheral ([www.verifinger.com](http://www.verifinger.com)) is a simple, flexible device that allows for fingerprint-based access to a PC through a rugged external finger-

print scanner and software on the PC. For really secure (hyper)printing, the Touchless Finger Sensor from Biometric Partners Inc. ([www.biometricpartners.com](http://www.biometricpartners.com)) uses patented light sources and recognition kernel technology to accurately read a user's fingerprints.

from behind up to 5 cm (2 in.) of hair-  
brushed skin.

The Scanlon 2110 from JeffreyTel ([www.jeffreytel.com](http://www.jeffreytel.com)) scans a user's iris, then allows those authorized to access computers, secured doorways, ATMs, or other automated transactions.

devices. Every person has a unique pattern to the iris and retina of each eye, and the algorithms (mathematical sets of rules) for recognizing these patterns is now very good. Some big problems with eye scanning systems, however, are their complexity, cost, and tendency to break down. They work great in spy movies, but are—so far—a less attractive option in real life, especially for small businesses.

SpeakEZ Secure Voice Solutions (www.speakez.com) is a software-only product that compares a stored sample of an authorized user's voice to a live sample, to permit access. It uses most macrophone and sound card systems, and a laptop microphone.

FaceOn face recognition software from Syntex Technology (www.syntex.com) of Toronto, offers high quality recognition of facial features from a video stream.

### Silenced voices from Latin America?

Business technology works, and makes sense for businesses where security is a primary concern and where the IT budget and infrastructure exist to keep it operating smoothly all the time.

For example, the British government has made extensive use of face recognition technology as part of its anti-terrorism operations. The Sagem Morpho company ([www.morpho.com](http://www.morpho.com)) sells a Morpho Civil AFS fingerprint recognition system for government social agencies, to reduce fraud by users who adopt multiple identities to collect multiple benefits.

However, for the small business or home office, asymmetric technology should be evaluated carefully in terms of return on investment. In many cases, a better option is a combination of lower tech security (locks and alarms), combined with software-based security measures, such as virus-scanning and encryption.

Biometric devices are increasingly finding their place in an identification technology for governments and corporations, not in anti-theft technology for individual PC owners. If this trend continues, expect vigorous debates over the civil liberty and privacy implications of biometric surveillance in the post-Sept. 11 world.

Lock it down

One of the simplest, cheapest, and lowest maintenance security measures is to fit valuable equipment (printers, copiers, scanners, monitors, and desktop and laptop PCs) with cable lock or anchor plate systems. Virtually all notebook computers have anchor points for cable locking systems, and desktop PC and printers can be bolted to anchor pad systems that are strong and unobtainable.

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## Symantec unveils firewall appliance

Symantec Corp.'s (symantec.com) new Firewall appliance should be attractive to small businesses and larger enterprises that need to improve security at branch offices.

The all-in-one solution combines a firewall, VPN, and network support. It can handle up to 30 users, giving each secure outbound and inbound Internet access: email, FTP support, and virtual private network support for mobile workers who need to access the main network.

Kevin Kneppeler, manager of small and medium business products with Symantec in Toronto, says the new appliance is an offshoot of Symantec's enterprise-level offering, the WinBoxAppliance, which is designed for up to 100 users.

"There are a number of targets for this new product," Kneppeler says. "One is the small office that does not have the expertise or technical knowledge to install and maintain a firewall... And the other is a business with branch offices, where the head office may have a firewall solution,

but the branch offices don't."

There are three models of the Firewall/VPN: the 100, 200, and 300. The 100 includes a firewall and IPsec VPN, has 10/100 ports, and one WAN port; the 200 has the same firewall and VPN support, but has eight 10/100 ports, auto-sense network interfaces, and load balancing between two WAN ports. The Firewall/VPN 300 offers the same features in the 200 but adds remote VPN client support. Suggested retail prices for the 100, 200, and 300 are \$775, \$1,190, and \$1,605, respectively.

Kneppeler says the Firewall/VPN is one of the first offerings in what he sees as an emerging trend in the security market toward enterprise, hardware-based solutions.

While the WinBoxAppliance and the Firewall/VPN appliances are aimed at the business community, Kneppeler speculates that, in the near future, there will be similar offerings designed specifically for small and home office users.

—Sam Ibrahim

## Shop Brief

Continued from page 14

Everington Technology Group (www.everington.com), one of the pioneers in computer security hardware solutions, uses the bicycle lock analogy to explain the concept behind its cable and lock systems. Secure Services Systems (www.securesys.com) offers a Security Cable Package, a set of three metal cables and fittings for up to three devices, its Notebook Guardian 2000/201 systems for laptops, and many other models of locking systems.

One in-motion product from this company is the Drifcon alarm for laptops, which was apparently inspired by car alarms. The Drifcon consists of an external motion detector with an LED, vibration lock, security cable, and a very loud alarm. If an unauthorized person attempts to move the laptop without triggering a user-definable combination, the alarm sounds.

## Mark it up to your staff

Local police departments often offer a property-marking program to homeowners and small businesses. If you ask, you can borrow an electronic engraving pen that lets you put your name and contact phone number on equipment and furniture. It deters any thief who takes equipment in the process of giving the junk a try.

made them from borrowing to steal it. Or, if stolen, it may aid in recovery if the equipment is sold to someone else.

## Out of sight, out of (criminal) mind

One of the simplest ways to reduce the threat of theft is to be invisible. In a home office, don't set up your equipment where it is visible to someone who comes to the door, or visible through a window. Most thieves use potential targets, often waiting in order for a "customer." If they don't know it's there, they're less likely to choose you as a victim.

One of the most attractive reasons for thieves is the laptop computer, easy to carry, and readily resold for a substantial amount of money. In the office, laptops should always either be locked away in a secure storage cabinet when not in use, or locked down using some of the cable and lock systems discussed in this article.

When on the move with a laptop, never leave it or its carrying bag visible in your car. Always lock it in the trunk, before you start on your trip. If the window is shattered but no one is present with your car, the odds are good that a thief won't bother trying to get it there.

## Burn, but go be burned

In addition to using the backup features of your computer's operating system (see page 18)

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# Making security a new year's resolution

Antivirus software, firewall solutions for small and home networks

By Tom Venetis

**O**E we're all heard it before: that security is a serious issue and should not be taken lightly. But just in case you're forgotten how important it is to protect your computers and networks, let's do a quick review of some facts. And since we like to make resolutions when the new year arrives, perhaps it is also time to make a resolution to take security seriously.

According to the 2001 Computer Crime and Security Survey, put out by San Francisco, CA-based Computer Security Institute (CSI at [www.csi.com](http://www.csi.com)), nearly 80 percent of 538 computer users by experts surveyed said they had experienced some level of security breach in the last year. Nearly 64 percent said the breach led to financial losses.

And we're not talking a few bucks here. When Melissa virus (creation, Richard Power, was unleashed, he pleaded guilty to causing some US\$80 million in losses. That figure is probably not an accurate

estimate of the total financial losses that people around the world experienced when he let his creation loose. Some suggest it's closer to hundreds of millions, and the US\$80 million was simply the top scale for damages for someone being sentenced under U.S. federal guidelines.

## Risks and threats

The two security issues we should be most concerned about are deliberate hacks and viruses.

For many people—especially those with an “always-on” DSL or cable connection to the Internet—deliberate hacks are the most troubling security issue. Every day, personal systems and small networks are pinged, probed, and scanned by those looking to get in and do some mischief.

Who is doing this? According to James Greenough, a global telecommunications consultant with the Consultant Registry ([www.consultantregistry.com](http://www.consultantregistry.com)), these attacks are likely the result of teenagers looking to have some fun. He estimates that some

100,000 teens are using programs they have pulled from the Internet to hack into systems. These “script kiddies” often do it for fun. Where teens once hung out at the mall, they are now hanging out on computers looking to get into your email account and personal files.

What can you do to protect yourself from these little mischief-makers? Well, installing a firewall is a good start. Today, there are several software-based security solutions that anyone can use and that don't require a high level of IT expertise or large amounts of time and money to set up and maintain.

Symantec Corp. is a good place to start when you are thinking about security solutions. Its Norton Personal Firewall 2002 protects your computer from outside intrusions, such as malicious hackers. It allows you to control both inbound and outbound Internet connections and blocks port scans, a technique many hackers use to see if there are unprotected machines they can break into. But the key components for small businesses are

application alert and application control—the former asks you whether you want to permit or deny an application or communication to the Internet, and the latter lets you stop an application or program from accessing the Internet.

You should read an application control when looking at a software-based firewall. That is because hackers targeting a computer or network often try to take over a program or application to either attack the system further or to use the compromised system as a platform to attack other systems. For a denial of service attack, for example, a hacker takes over a computer or network, then launches an attack against other systems from that compromised system. At larger companies, hackers are increasingly turning to home computers and small business networks to launch such attacks because they are less secure.

Frederick Behrens, vice-president of marketing and business development

Continued on page 22

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# Making a security new year's resolution

Continued from page 26  
with the San Francisco, Calif.-based Zone Labs Inc. (www.zone-labs.com) says applications control is a key feature in its popular, copy-to-cut ZoneAlarm.

"The ZoneAlarm solution works by asking a very simple question: What applications do you trust to access the Internet?" Polman adds. "This greatly simplifies security for small businesses. It reduces security to a set of simple questions like do you want your Internet Explorer to access the Internet? Do you want your QuickBooks to access the Internet? Or do you want some unknown program called Sub? to access the Internet? With something like Sub?, you don't know what it is and you certainly will want to step it from accessing anything."

Zone Labs says it has simplified ZoneAlarm 3.0 and ZoneAlarm Pro 3.0 so they are more intuitive to use, thereby making it easier to secure a system or network. Both versions feature updated firewalls and improved wizard functions for easy setup. They also have a home-page style overview screen that offers a quick glance at security details and includes more information on the level of alerts ZoneAlarm can generate.

Both versions monitor applications and

components to prevent a hacker from planting a Trojan horse type virus onto a system in order to attack it later. ZoneAlarm 3.0 comes with several other features, including support for LAN and wireless networks, both of which are now common in small businesses.

A free version of ZoneAlarm can be downloaded from the company's Web site. The Pro version is US\$39.95 for a single license and annual updates and renewals are US\$19.95 (Prices for individual licenses are listed at Zone Labs' site).

Another software firewall worth considering is Tiny Personal Firewall 2.0. Eric Hain, vice president of business development with Santa Clara, Calif.-based Tiny Software (www.tinysoft.com), says his company is unique in offering a bidirectional firewall capable of filtering both applications and protocols for the small and home office market.

"A good firewall must check for applications spoofing and needs to be doing such things as checking for MD5 hashes on applications to make sure that Trojans have not shown up and [are not] trying to take over an application," Hain says. "A lot of companies have 'personal firewalls,' but very few are true firewall technology."

Tiny Personal Firewall allows users to set rules for what Internet addresses can be trusted, network administration, and

## Security info sites

### Symantec's SMC Institute

This site provides up-to-date information on viruses and security threats, including security advisories and virus definitions. It also has links to remove such threats as CodeRed, Search, Nimda and other malware, code. Has a useful set of white papers for background on security and virus threats.  
www.symantec.com

### The SANS Institute

Members of this research and education organization include more than 94,000 system administrators, security professionals, and network administrators. They share information on security issues and find solutions to many kinds of threats. It offers extensive best practices info, and tips for individuals and small businesses.  
www.sans.org

### Canadian Centre for IT Security

This centre provides information and research on computer security and high-tech criminal investigations. It also offers courses that can lead to a Certificate in Internet and Technology Security.  
www.ccs.org

### CanCERT

CanCERT encourages the collection, analysis, and reporting of statistics on Canadian IT security incidents.  
www.cancert.ca

### Computer Security Institute

An excellent site offering a wide array of information on security. It offers links to important alerts, up-to-date news, and information on threats and issues for both business and individual computer users.  
www.csis.com

### Logon authentication

Another advantage of the Tiny Personal Firewall is that it is easy—only 6,324KB before installation. This is very attractive to small businesses with modems or where hard drive space is at a premium. The Tiny Personal Firewall can be loaded onto laptops allowing for more

secure connections to the home network and thereby characterizing another avenue hackers may try to use.

Tiny Personal Firewall is free for home use and US\$39 per seat for use in new users (see Tiny's site for complete price list).

Continued on page 36

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# Last-minute tech gift ideas



By Sean Carruthers

If you're still looking for the perfect gift for the techies in your life, you may want to consider some of the last-minute arrivals in our Holiday Gift Guide roundup.

## Creative PC-Cam 360

From Creative Labs  
www.creative.com  
Estimated price: \$99



Better known for audio devices, Creative nonetheless plays in a few other arenas. Its newest camera, the PC-Cam 360, doubles as both a web-enabled Webcam and a tethered still camera.

The PC-Cam comes with 8 MB of onboard flash memory, which holds about 128 shots at the camera's maximum tethered resolution of 640x480 (or if you prefer, up to 75 seconds of audio and video, or up to 35 minutes of straight audio). Back at your desktop, you can drop frames to the included base and look it

up on a PC via USB cable, at which point you can use it for streaming video in programs like Macromedia NetMeeting, or capture still images directly to the PC at resolutions up to 1,624x580.

A fairly good software bundle—NetMeeting, Olympus Photo Express MCE editing software, a monitoring package for security or Webcam use, and Web site creation tools—is included as the box. The camera also has AAA batteries.

## Logitech ClickSmart 990

From Logitech  
www.logitech.com  
Estimated price: \$175



Logitech is a big player in the peripheral category, from mice to keyboards to the new ultracompact QuickCam. The ClickSmart is a direct descendant of the QuickCam, but now instead of being tethered to the PC, you can also quickly detach the camera component and use it as a standalone still camera.

Recent of this dual camera, the ClickSmart 990 looks more like a tradi-

tional camera than the QuickCam. It can capture still images of up to 1.3 megapixels, and video at up to 640x480 pixels. Hook it up to the PC via USB and it can be used as a Webcam or with applications like NetMeeting.

This all-similar to other dual-mode cameras we've looked at, but the Logitech ClickSmart 990 has one advantage: it uses removable media instead of internal flash memory. It comes with an 8 MB SmartMedia card, which you can easily replace with a higher-capacity card if you want to take more pictures in the field.

The camera is compatible with Windows 9x, Me, 2000, and XP. It's powered by four AAA batteries.

## Nex II Digital Audio Player

From IronPilot  
www.ironpilot.com  
Estimated price: \$100

If you're looking for an ultra-compact MP3 player with the ability to store a lot of songs, the Nex II may be what you need. The basic player is as small as most of the other CompactFlash-based models (the Rio, Ipyra, Nomad II, etc.), but it doesn't go as far by including a Type II CF slot and housing IBM microdrive compatibility. You can buy the Nex II with a CF card or microdrive included, but if



you already have your own high-capacity cards, you can buy the basic player for a very low price.

The player is fairly simple for the most part: A wheel along the side can be used for scrolling through menus and selecting the right track. The player is programmable, and features customizable EQ settings. You can get data to the player via USB or by copying your audio files directly to the media using a CF reader attached to your PC.

If we have a complaint with the device, it's that it doesn't support folders, which means that if you're using a 1-Gb microdrive, you'll have to wade through a lot of tracks on the mini LCD screen to find the one you want. (With the microdrive, any tracks to the player may also result in a slowdown, which means you may be better off with high-capacity CF cards, over all.)

One nice aesthetic feature is the NESQUE window on the front of the

Continued on page 42

By Sharlene Myers

Today, I travel ancient palaces in England and Japan. I traded my knowledge of North American capital cities. I viewed paintings by famous Canadian artists. And I didn't leave my desk.

## Encarta Reference Library 2002



from Microsoft  
www.microsoft.com  
Estimated price: \$50 (plus \$20 extra)

New products show the potential of electronic books: better than new media-based encyclopedias. So far removed is this five-CD set (also available on one DVD) from the dusty, heavy, hardcover books I used to lug back and forth to my desk, that it is almost unrecognizable. A search in the Encarta Reference Library 2002 will yield not only a single article on a

selected topic, but a couple of pop-up videobars, a collection of related photos, and links to related sites and up-to-date information on the Internet.

New in this version is a choice of installation modes: full and minimum. Full copies the contents of all five discs to your hard drive, so you won't have to swap CDs when going on. However, this option is only for those with plenty of free hard drive space, as it requires 3.2 GB. If you don't have that, you can't spare the drive space, and don't mind switching discs, select the minimum install (requires 900 MB of space). You can always go to the full install later.

One obvious advantage of this type of reference source is its ability to stay current. Encarta offers Internet updates through its Club Encarta service (requiring a Microsoft Passport account to activate). Its first update included additions to articles about New York City, Osama bin Laden, recent political turmoil in Nepal, and the peace process in Northern Ireland, as well as new articles on Indonesian President

Megawati Sukarnoputri, and the Mars Mars Game Park in Kenya. This service—which offers access to Encarta Online Release from any computer with an Internet connection—is included with the purchase of the software, but only for 2002. To continue the service, users will have to upgrade to the 2003 version, when it becomes available, for \$49.95.

In addition to updates, users can now access live media related to research topics, including current MSNBC headlines, weather forecasts, and online radio mixtapes. The entry page about Beirut, for example, has a link to a list of live radio station online. Double-clicking on a station opened my default media player and started the stream.

This is a new feature and a nice touch, making for easy places users can now immediately find. Unfortunately, it did not seem to be available for all entries. Pages on Seattle and New York City offered current headlines, but pages on Vancouver and Toronto did not.

Another new feature, 3D Virtual Tour,

offers computer renditions of famous historical sites, such as the Acropolis and the Colosseum. I found Encarta's, the affiliated outlet of English King Edward I, and Katsura Castle, the palace of a medieval Japanese warrior. As I navigated with my mouse, windows popped up offering more details about what I was seeing.

The included Research Center helps users collect and organize articles in folders, and includes a Canadian curriculum guide. Produced in cooperation with McGraw-Hill Technology (a company that compiles information about educational standards and vocational research throughout North America), the guide provides a general idea of objectives for each level of schooling in Canada, rather than curriculum information for each province. It also includes links to resources to help parents supplement their children's studies.

Overall, this is a valuable resource, especially for students, at a fraction of the price of a hardcover encyclopedia set. And it's much easier to pack for the trip to college. □











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**Making a security new year's resolution**  
Continued from page 24  
the best complete virus scan we've seen (and why you should do it regularly).

From Panda Software Canada ([www.panda-software.com](http://www.panda-software.com)) comes Panda Antivirus in Platinum and Titanium editions. Both

offerings from the Montreal-based developer include easy-to-use antivirus protection and daily automatic updates so you can keep up with new viruses as they are released.

Panda president, Francisco Laverne, says you should make sure your antivirus

solution does more than just compare possible viruses to a database of known culprits. Instead, look for antivirus software with a "heuristic" engine, which will also look for telltale signs a virus leaves when it begins to infect a computer or network. Most viruses, worms, and mali-

cious codes will begin to perform actions before overwriting the registry, scanning the email address book of Microsoft Outlook, trying to access the Internet or an unknown server (through a program). If this happens, a heuristic engine alerts the user or administrators, allowing the system to be shut down or the process isolated before the real damage is done.

If you think a system is infected, but you haven't installed antivirus software, take a look at HouseCall. This online offering from Cupertino, Calif.-based Trend Micro Inc. ([www.trendmicro.com](http://www.trendmicro.com)) recently took first prize at an online antivirus test conducted by AV-Test.org.

HouseCall uses Internet Explorer or Netscape—and the ActiveX technology built into both browsers—to scan a machine's hard drive. If your browser does not have ActiveX, HouseCall offers a downloadable Java applet to conduct the scan. If HouseCall finds a virus, it tells you about it and how to get rid of it. It will even help you create a Rescue Disk for repairing a compromised system. (However, it has to be created on an unaffected machine.)

Finally, even if you install a firewall, antivirus software, and other security solutions, in the end it all comes down to the human factor. Security is a process, not a single solution or set of solutions. It is amazing how often the best security steps fail because someone was not following the procedures.

Some of the most basic procedures are the following:

- Never shut off your antivirus programs.
- Never open an email attachment from someone you do not know.
- Antivirus and firewall updates. It's one of the best ways to protect your system.
- If employees are mobile or work in a remote location, train them to log in and are authenticated before they can access the company network.
- Change passwords often and keep them secret.

Taking any of these steps could save you a considerable amount of grief, time, and money. Don't follow any of those steps and you might as well leave your doors unlocked. □

#### PeaceOut

PS—Take a moment to clear your head at the PeaceOut site, which offers a relaxing flash presentation that helps relieve control freakishness, stress, doubt, and paranoia. It takes less than five minutes, but is a refreshing and soothing exercise that can provide mental sanctuary when needed.  
[www.peaceout.ca/english/index.html](http://www.peaceout.ca/english/index.html)

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## Hands On

Lab Test • Hardware Evaluations • Software &amp; CD-ROM Reviews

## Mega megapixels

TCP Test Lab focuses on four megapixel and higher digital cameras

By Sean Connolly

This month, we've decided to look at digital cameras with resolutions of four megapixels and higher, a level that was considered exceedingly high-end just two years ago. In fact, a professional-level model that featured a four-megapixel CCD sensor would have set you back \$34,000 or more at that time. Now, the same resolution, in a point-and-shoot model, can be purchased for less than \$2,000.

## What is a megapixel?

Pixel is an abbreviation of the term "picture element." In digital cameras, the image sensor, which captures image information, consists of a geometric grid of pixels. The more pixels the image sensor contains, the more discrete pieces of information it can capture, and generally, that translates into higher resolution images. When we refer to a megapixel, we mean an image consisting of one million pixels, generally in a con-



figuration of around 1,328x864 pixels.

It's important to remember something about two-dimensional grids: when you double something in both directions, it actually quadruples the number of points in the grid as a whole. Because of that, a two-megapixel camera doesn't produce images that have twice the dimensions of

those taken by a one-megapixel camera. That bonus is bestowed on the four-megapixel camera.

What does this mean? If you're capturing images for the Web, a four-megapixel camera will be paid overkill, and you'll spend the majority of your time scaling down pictures so they can fit on the screen (typically 800x600 or 1,024x768 pixel resolutions—both of which are still smaller than a one-megapixel image—are a sensible size for Web use).

If you're planning to use the images for print purposes (magazines, brochures, or just printing them out on an inkjet for your photo album), a four-megapixel camera starts to show—at a print resolution of 300 dots per inch (dpi), an image would be 8.5x11 in. Here are a few models that merit that mark, or better.

Continued on page 48

## ACDSee gets bigger and better

By Frank Leck

While the "big" apps, like Microsoft Office and Adobe Illustrator, tend to hog the spotlight, there are lots of "little" software products that become quietly ubiquitous. ACDSee, from Victoria, B.C.-based ACD Systems Inc., falls into the latter category.

## ACDSee 4.0



## ACDSee 4.0 PowerPack

from ACD Systems Inc.  
www.acdsystems.com  
Internet price: \$75 (ACDSee 4.0) | \$91 (PowerPack) | \$100 (PhotoLibrary)

Embedded by its success (with more than 24 million registered users), ACD Systems took a big risk late in September. With ACDSee 4.0, it tried to turn what had been a barely-legal file viewer into a much more substantial Swiss Army knife-like graphics suite. For the most part, the gamble has paid off.

Still, the main thing ACDSee does—letting you naturally view image formats including JPEG, TIFF, and PNG, as well as many less common formats like ARW, SCR, and TGA—hasn't changed in this new version. ACDSee can also browse inside ZIP, RAR, and other types of com-

Continued on page 38

## Enter the personal photo lab

Where you don't need a PC to print images

By David Isaacs

Downloading images from your digital camera to a computer, then printing them out on an inkjet printer can be a hassle when all you need are snapshots. Wouldn't it be nice if printing digital images could be as painless as taking a roll of film to the mall?

A number of printers are now available that make computer-free photographing a

reality. The first inkjet printer we tested with this capability was the \$770 Epson iPhoto, which was introduced more than two years ago. It had both CompactFlash (CF) and SmartMedia (SM) memory card slots, and a simple menu for selecting images to print.

Ever since we no longer directly market this style of printer, but other inkjet makers have followed, including Epson with its Stylus Photo 740EXF and Hewlett-Packard with its PhotoSmart 3805 and

Continued on page 36



Epson iPhoto

# Flat out Fantastic!

NEW



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**SUPPLEMENTAL FIG.**



DOI: 10.1002/for

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Found Here:	WPI 1.4
Estimated:	1.55 M
Features:	900 km/s 1000 km/s Galaxy

with 1 meter (100 cm) of 500-mesh sieve material	500-mesh sieve 100 cm long 100 cm wide 100 cm high
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Wavelength 10.6 $\mu\text{m}$ 100 mW Quartz/AgCl Aspheric/Graded Fused	Output 10.6 $\mu\text{m}$ 100 mW Quartz/AgCl Aspheric/Graded Fused
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Larson, P. 1997. <http://www.lesons.org>

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1984-1986	1987-1989
1990-1992	1993-1995
1996-1998	1999-2001
2002-2004	2005-2007
2008-2010	2011-2013
2014-2016	2017-2019
2020-2022	2023-2025
2026-2028	2029-2031
2032-2034	2035-2037
2038-2040	2041-2043
2044-2046	2047-2049
2050-2052	2053-2055
2056-2058	2059-2061
2062-2064	2065-2067
2068-2070	2071-2073
2074-2076	2077-2079
2080-2082	2083-2085
2086-2088	2089-2091
2092-2094	2095-2097
2098-2100	

<p> <b>Wiederholungsrate</b>  <b>20,4 %</b>  <b>Erkennung</b>  <b>100 %</b>  <b>Präzision</b>  <b>100 %</b> </p>	<p> <b>Wiederholungsrate</b>  <b>20,4 %</b>  <b>Erkennung</b>  <b>100 %</b>  <b>Präzision</b>  <b>100 %</b> </p>
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# Mega megapixels

Continued from page 46

## Canon PowerShot G2

From: Canon Canada

www.can.ca

(Suggested street price: \$1799)

• Four megapixel G2/G2.7M pixel CCD

• 38 optical zoom, 140 digital zoom

- USB connection to PC
- Type I CompactFlash (CF) slot, 11 MB CF card required
- Separate lens cap with tether
- Compatible with Windows 98, Me, 2000, XP and Mac OS 8.6 to 9.1
- Comes with proprietary rechargeable lithium-ion

## battery and charger

- Shot images in JPEG, RAW or RAW format
- Built-in microphone and speaker

The G2 is Canon's most advanced prosumer model. You can use it as a point-and-shoot camera and get excellent results, choose one of several



pre-programmed shooting modes, or set it on manual and dial in your own settings.

This model is an update of the G1, and boasts the four megapixel sensor (compared to the G1's 3.3 megapixel sensor), the newer model has an image processor that is faster and cleaner (less electronic noise that may show up as red flicks, for example).

One of our favorite features is the swivel-tilt LCD viewing screen, which allows you to hold the camera at unusual angles—for example, above your head or near the ground for a worm's-eye view—and still see your composition.

Among the pre-programmed shooting modes are scenes, which set the camera for maximum depth of field, and a panorama mode (which we first saw on Canon digital cameras), where you can stitch together several frames into a single larger image. In panorama mode, the image of a shot you've just taken remains on view on the LCD screen to help you line up the next shot.

Canon's RAW format allows advanced amateurs to access the raw image data as it comes off the image sensor, before it is processed by the camera's software. This permits certain fundamental changes to the image, such as restoring the white balance. With the RAW format, you can do things like set the white balance after you've taken the picture. The main disadvantage of the format, however, is the inconvenience of having to acquire the images using a format driver since image editors do not understand the format.

## Canon PowerShot S40

From: Canon Canada

www.can.ca

(Suggested street price: \$1099)



- Four megapixel G2/G2.7M pixel CCD
- 38 optical zoom, 140 digital zoom
- 38x connection to the PC
- Type II CF slot, 11 MB CF card included
- Lens protected by sliding cover
- Compatible with Windows 98, Me, 2000, XP and

Continued on page 50

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- ColdFusion
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- Flexible Options

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- [info@defaulthost.com](mailto:info@defaulthost.com)
- 800-658-6888